

Management of Incidental Left-Sided Gallbladder

George C. Zografos, MD, PhD, Emmanuel E. Lagoudianakis, MD,
Dimitrios Grosomanidis, MD, Nikolaos Koronakis, MD, Dimitrios Tsekouras, MD,
John Chrysikos, MD, Konstantinos Filis, MD, Andreas Manouras, MD, PhD

ABSTRACT

A left-sided gallbladder is a gallbladder located on the left side of the round ligament. It constitutes an uncommon anatomic abnormality. We report on a case of left-sided gallbladder discovered incidentally during laparoscopic cholecystectomy, and we discuss the different forms of this anatomic anomaly and its surgical relevance.

Key Words: Left-sided gallbladder, Laparoscopic cholecystectomy, Trocar positioning.

INTRODUCTION

A left-sided gallbladder (LSG) is a gallbladder located on the left side of the round ligament and not on the right side, which is its common location. It constitutes an uncommon abnormality first described from Hochstetter in 1856. The reported incidence of this anomaly is estimated to be between 0.1% and 1.2%.¹⁻⁴ The present case report demonstrates a case of LSG identified during laparoscopic cholecystectomy. Herein, we discuss the different forms of LSG and the surgical relevance of this anomaly.

CASE REPORT

A 50-year-old Caucasian male presented to our surgical clinic with a 3-day history of acute epigastric discomfort and vomiting. The clinical examination revealed no pathological signs and no elevated temperature. His blood results showed that white blood cell count, bilirubin, alkaline phosphatase, alanine transferase, and gamma-glutamyl transferase were in the normal range.

An abdominal ultrasound was performed, which showed gallstones in the gallbladder, whereas the diameter of the common bile duct (CBD) was normal (3.7 mm), suggesting the absence of obstruction and the presence of gallstones in the CBD. No other pathology was identified, and cholelithiasis was the presumed diagnosis.

The patient was informed of the diagnosis, and a laparoscopic cholecystectomy was performed. During the procedure, after the insertion of the umbilical port (10mm), we incidentally discovered a left-sided gallbladder (LSG) located under the third hepatic segment at the left of the round ligament (**Figure 1**). Consequently, the positions of the surgeon and the assistant were modified appropriately to the left side of the patient, and the patient was turned in a left-side up position to optimize the view of the gallbladder and Calot's triangle. A trocar was inserted in the middle line, middle of the distance between the umbilicus and the xiphoid (10 mm), and the 2 lateral subcostal ports (5 mm) were placed on the left midclavicular and left anterior axillary lines of the abdomen, respectively (**Figure 2**).

After dissecting Calot's triangle, we identified the cystic duct, the common hepatic duct junction, and the cystic

First Department of Propaedeutic Surgery, Hippocrateion Hospital, Athens Medical School, Q. Sophia114, 11527, Athens, Greece (Drs Zografos, Lagoudianakis, Tsekouras, Filis, Manouras).

Second Department of surgery, 417 NIMTS Hospital, Athens, Greece (Drs Grosomanidis, Koronakis, Chrysikos).

Address correspondence to: Emmanuel E. Lagoudianakis, MD, Fellow in General Surgery, Agamemnonos 17, Alimos 17456, Athens, Greece. Telephone: +306948529440, E-mail: redemlag@yahoo.gr

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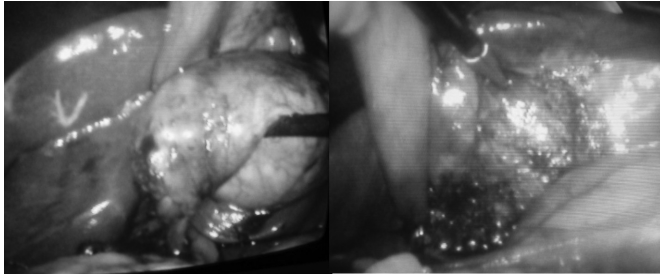


Figure 1. The cystic duct and cystic artery are shown after complete dissection of Calot's triangle. The gallbladder fossa was located in the undersurface of the third hepatic segment.



Figure 2. A 10-mm trocar was placed in the mid distance of the umbilicus-xiphoid line. This position permits the laparoscopic grasper to place traction to the infundibulum during the dissection of Calot's triangle and to place clips on the cystic artery and duct that were lying in the normal right of the round ligament position. The laparoscopic dissector was placed in the left mid-clavicular trocar, and a second grasper was positioned in the anterior axillary line to lift the gallbladder fundus.

artery, which, interestingly, were located as in the case of a right-sided gallbladder. The cystic duct joined the common hepatic duct on the right side, and the cystic artery arose normally from the right hepatic artery (**Figure 1**). After clipping and cutting the cystic duct and the cystic artery, the gallbladder was excised as usual. The patient recovered uneventfully and was discharged on the first postoperative day.

DISCUSSION

Left-sided gallbladder (LSG) without situs inversus can be found in 2 anatomic variants. First is the true LSG, where

the gallbladder is located on the left lobe of the liver. In this situation, 2 subtypes can be found according to the way the cystic duct (CD) joins the biliary tree.¹ The cystic duct joins the common bile duct (CBD) from the right side as in our case. The explanation of this variation may be that the normal gallbladder bud migrates to the left lobe instead of the right and lies on the left side of the round ligament.² The cystic duct joins the left side either of the (CBD) or of the left hepatic duct (LHD) directly and is accompanied by failure in the development of the normal structure in the right side.

Second, the gallbladder is on the left side of the round ligament but still on the right lobe of the liver, because the round ligament has deviated to the right^{2-3,5}

Of 41 patients with LSG, Nagai et al² found 20 with the cystic duct joining the CBD from the right side and 11 from the left. In 2 patients, the CBD directly joined the right hepatic duct and in one patient the LHD.

Recent studies suggest that routine ultrasonography in patients with gallstone disease often fail to make the diagnosis of LGB disease in the majority of cases,¹ which was also the case in our patient. In another study,⁶ the diagnosis was made only at the time of surgery, despite repeated radiological investigations.

Knowledge of the location of the gallbladder is of great importance for the surgeon, particularly when cholecystectomy or other biliary surgery is to be performed. Because there are many variants not only of the position of the gallbladder but also in the way the cystic duct joins the biliary tree, understanding the individual's anatomy is crucial to avoid injuries to the bile ducts in these patients. Idu et al¹ reported 5 cases of LSG and suggested several modifications of the laparoscopic procedure, such as that the right hand operating ports should be placed on the left of the midline, which was the way we performed the procedure in our patient. Hunter et al⁷ suggested that the preparation and clipping of the cystic duct should be performed as nearly as possible to the infundibulum, after the surrounding tissue is stripped down.

CONCLUSION

LSG is a rare abnormality in the position of the gallbladder that consists of several subvariations referred to as the cystic duct course. The recognition of them is important when performing cholecystectomy to avoid injury to the biliary tree.

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